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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,799	10/16/2003	Daniel A. Gutknecht	H0005572	7932

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EXAMINER

TRIEU, THAI BA

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/686,799

Applicant(s)

GUTKNECHT, DANIEL A.

Examiner

Thai-Ba Trieu

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20,27 and 28 is/are pending in the application.
- 4a) Of the above claim(s) 21-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20,27 and 28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/30/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims **1-20 and 27-28**, drawn to *"a shaft mountable member/bearing, a turbocharger having a shaft mountable member/bearing, and a lubricating method for a shaft mountable member/bearing"*, are classified in class **417**, subclass **407**.
- II. Claims **21-26**, drawn to *"a method of manufacturing a shaft mountable member/bearing"*, are classified in class **29**, subclass **898.057**.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and Group II are related as apparatus and process of making.

The inventions are distinct if either or both of the following can be shown: (Group II, claims 21-26) that the process as claimed can be used to make other and materially different product or (Group I, claims 1-20 and 27-28) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the apparatus as claimed can be used to practice another and materially different process, such as process of casting a shaft mountable member/bearing.

During a telephone conversation with **Mr. Nicolas Gallo (Reg. No. 50,135)** on Thursday June 24, 2004, a provisional election was made without traverse to prosecute the invention of **Group I, claims 1-20 and 27-28**. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21-26 are withdrawn from

further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(l).

DETAILED ACTION

For the purpose of this Office Action, the claims 1-20 and 27-28 will be examined as best understood by the examiner.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “**second member**” (See claim 1, lines 2 and 9; claim 27, line 2, 4, and 9), “**third member**” (See claims 2 and 9, lines 6-7, and claim 28, line 7), and “**adjacent one**” (See claim 8, line 19) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

1. The disclosure is objected to because of the following informalities:

- On Page 6, line 29, "bearing 60" should be replaced by -- **bearing**

50a,50b – (for correcting typo error).

Appropriate correction is required.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- In claim 1, line 9; claim 27, line 2, 4, and 9, **“second member”** should be incorporated with the specification.
- In claims 2 and 9, lines 6-7, and claim 28, line 7, **“third member”** should be incorporated with the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **1-20 and 27-28** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

- In claim 1, lines 2 and 9; claim 27, line 2, 4, and 9, the recitation of **“second member”** renders the claims indefinite, since it is not clear that, which element(s) is/are referenced to “second member”. Accordingly, applicant should define or clarify “second member”.
- In claims 2 and 9, lines 6-7, and claim 28, line 7, the recitation of **“third member”** renders the claims indefinite, since it is not clear that, which element(s)

is/are referenced to "third member". Accordingly, applicant should define or clarify "third member".

- In claim 8, line 19, the recitation of "**adjacent one**" renders the claims indefinite, since it is not clear that, which element(s) is/are referenced to be adjacent, such as thrust collar, spacer, turbine wheel, compressor wheel, face, or surface. Accordingly, applicant should define or clarify "adjacent one".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 8-9, 16 and 27-28 are rejected under 35 U.S.C. 102(b) as best understood as being anticipated by Woollenweber (Patent Number 3,993,370).

Regarding claims 1-3, Woollenweber discloses a shaft mountable member (56, 58) for mounting on a rotatable shaft (26) and adjacent a face of a second member (50, 60, 62, 64, 66), the shaft mountable member comprising:

a body portion defining a first side, a second side, and a bore extending between the first and second sides for receiving the shaft (26) therethrough (See Figure 2),

wherein the first side defines a plurality of grooves (68, 72) extending radially between the bore and an outer perimeter of the first side, each of the grooves providing a fluid passage between the bore and the outer perimeter such

that fluid is communicated between the bore and the outer perimeter through the grooves without generating significant thrust loading on the second member (See Figure 2, Column 2, lines 18-22, and Column 4, lines 20-35);

wherein the second side defines a plurality of grooves extending radially between the bore and an outer perimeter of the second side, each of the grooves on the second side providing a fluid passage between the bore and the outer perimeter such that fluid is communicated between the bore and the outer perimeter through the grooves on the second side when the second side is positioned adjacent a third member (50, 60, 62, 64, 66) without generating significant thrust loading on the third member (See Figure 2, Column 2, lines 18-22, and Column 4, lines 20-35);

wherein the shaft mountable member is a bearing (56,58) (See Figure 2).

Regarding claims 8-9, Woollenweber discloses a turbocharger comprising:

a center housing (24) defining a cavity (Not Numbered) therethrough and a fluid passage (32') in communication with the cavity (See Figure 2);

at least one bearing (56, 58) positioned in the bore of the center housing (24'), the bore defining first and second opposite faces and defining a bore therethrough (See Figure 2);

a rotatable shaft (26) extending through the bore of the bearing and defining first and second ends at opposite sides of the center housing (24') (See Figure 2);

a compressor (18) connected to the first end of the shaft (26) and configured to

rotate with the shaft (26) , the compressor (18) defining a face adjacent the first face of the at least one bearing (58) (See Figure 2);

a turbine (14) connected to the second end of the shaft and configured to rotate with the shaft (26) and the compressor (18), the turbine (14) defining a face adjacent the second face of the at least one bearing (56);

wherein at least one of the faces of the bearing (56, 58) defines a plurality of grooves (68, 72) extending radially between the bore and an outer perimeter of the bearing (56, 58), each of the grooves providing a fluid passage between the bore and the outer perimeter such that fluid is communicated between the bore and the outer perimeter through the grooves (68,72) without generating significant thrust loading on the adjacent one of the compressor and turbine (18, 14) (See Figure 2);

wherein the second side defines a plurality of grooves (68, 72) extending radially between the bore and an outer perimeter of the second side, each of the grooves (68, 72) on the second side providing a fluid passage between the bore and the outer perimeter such that fluid is communicated between the bore and the outer perimeter through the grooves (68, 72) on the second side when the second side is positioned adjacent a third member without generating significant thrust loading on the third member (50, 60, 62, 64, 66) (See Figure 2, Column 2, lines 18-22, and Column 4, lines 20-35).

Regarding claim 16, Woollenweber discloses an elongate shaft (26) for receiving a relatively rotatable member (56, 58), the shaft (26) comprising:

a first portion having an outer surface defining a first diameter, the first portion being configured for receiving the rotatable member (56, 58) (See Figure 2);

a second portion (Including shaft 26, and bearing 56, 58) having an outer surface defining a second diameter larger than the first diameter, the second portion being adjacent the first portion (See Figure 2);

a shoulder surface extending radially between the outer surfaces of the first and second portions, the shoulder surface defining a plurality of grooves (68, 72) extending radially between the outer surfaces of the first and second portions (See Figures 3-5), each of the grooves providing a radial fluid passage between the shoulder surface and the relatively rotatable member (56, 58) such that fluid is communicated through the grooves (56, 58) without generating significant thrust loading between the shoulder surface and the relatively rotatable member (56, 58) (See Figure 2).

Regarding claims 27-28, Woollenweber discloses a method for circulating between a shaft member (56, 58) on a shaft (26) and an adjacent face of a second member (50, 60, 62, 64, 66), the method comprising:

providing the shaft member (56, 58) on the shaft (26), the shaft member (56, 58) defining a first side, a second side, and a bore extending between the first and second sides for receiving the shaft therethrough (See Figure 2);

providing the second member (56, 58) adjacent the first side of the shaft member (56, 58) (See Figure 2);

circulating a fluid radially through a plurality of grooves (68, 72) on the first side of the shaft (26) between the bore and an outer perimeter of the first side of the shaft member (56, 58) such that the fluid is communicated between the bore and the outer perimeter through the grooves (56, 58) without generating significant thrust loading between the shaft member and the second member (50, 60, 62, 64, 66); providing a third member (50, 60, 62, 64, 66) adjacent the second side of the shaft member (26), and circulating the fluid radially through a second plurality of grooves (68, 72) on the second side of the shaft member (56,58) between the bore and an outer perimeter of the second side such that the fluid is communicated between the bore and the outer perimeter of the second side through the second plurality of grooves without generating significant thrust loading between the shaft member and the third member (50, 60, 62, 64, 66) (See Figures 2-5, Column 2, lines 18-22, and Column 4, lines 20-35).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6, 10-12, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woollenweber (patent Number 3 993 370), in view of design choice.

Woollenweber discloses the invention as recited above; however, Woollenweber fails to disclose at least 15 of the radial grooves on the first side each radial groove having a depth of less than about 0.025 inches, and the combined cross-sectional area of the grooves being at least about 0.003 square inches.

One having an ordinary skill in the bearing/washer art, would have found the number of the radial grooves being at least 15, the depth of each groove being less than about 0.025 inches, the combined cross-sectional area of the grooves being at least about 0.003 square inches as a matter of design choice depending on the device requirements. Moreover, there is nothing in the record which establishes that the claimed dimensions and structure, presents a novel of unexpected result (See *In re Kuhle*, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Claims 7, 13, and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Woollenweber (Patent Number 3,993,370).

Claims 7, 13, and 20, which recite the grooves being formed by pressing a die against the shaft mountable member, and the die defining a contoured surface corresponding to the shape of the grooves, are treated as product by process claims. The product by process claims are rejected over a prior art product of Woollenweber, that appears to be identical, although produced by a different process, the burden is upon the applicants to overcome forward with evidence establishing a obvious difference between the two. See *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983).

Claims 7, 13, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woollenweber (patent Number 3 993 370), in view of Miura et al. (Patent Number 6,698,097 B1).

Woollenweber discloses the invention as recited above; however, Woollenweber fails to disclose the grooves being formed by pressing a die against the shaft mountable member, and the die defining a contoured surface corresponding to the shape of the grooves.

Miura teaches that it is conventional in the method for manufacturing bearing devices, to utilize the grooves (11) being formed by pressing a die against the shaft mountable member, and the die defining a contoured surface corresponding to the shape of the grooves (11) (See Abstract, Column 3, lines 4067, and Column 4, lines 1-8).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the grooves being formed by pressing a die against the shaft mountable member, and the die defining a contoured surface corresponding to the shape of the grooves, as taught by Miura, to minimize the wear resistance between the bearing surfaces, in the Woollenweber device.

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woollenweber (patent Number 3 993 370), in view of Yoshikawa et al. (Patent Number 5,174,733).

Woollenweber discloses the invention as recited above, and further discloses each of the bearings defining a plurality of the grooves (68, 72) on a respective face and on each face thereof; however, Woollenweber fails to disclose a spacer being position between the two bearings.

Yoshikawa teaches that it is conventional in the supercharger art , to utilize a spacer (17) being position between the two bearings (13, 14) (See Figures 1-2).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a spacer being position between the two bearings, as taught by Yoshikawa, to maintain the distance between the two bearings in the Woollenweber turbocharger.

Conclusion

The IDS (PTO-1449) filed on January 30, 2004 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Ward et al. (US Patent Number 6,709,160 B1) disclose a turbocharger bearing lubrication system.
- Pairone et al. (Pub. Number US 2003/0059143 A1) disclose an annular element for a rolling bearing.
- Chen et al. (US Patent Number 5,480,234) disclose a journal bearing.
- Arms (US Patent Number 2,349,690) discloses bearing lubrication.

- Oguchi et al. (Patent Number JP 2001140866 A) disclose a fluid dynamic pressure bearing and a spindle motor having a thrust groove machining die being pressed by a press machine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (703) 308-6450. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
July 6, 2004



Thai-Ba Trieu
Patent Examiner
Art Unit 3748